

Clinical Section

Social and Medical Aspects of the Manitouwapah Indians

by FRANK WALKIN, M.D., Ashern, Manitoba
Medical Officer for Four Northern Indian Reserves

With the advance of medicine into the wilderness, many cases are referred to the hospitals and sanatoria. It is therefore in the interest of the medical profession that it be formally introduced to the Indian and his medical ills.

Up to now only a few of us have had the opportunity of treating him in his natural habitat—the reserve.

Various articles have recently been written concerning the administrative treatment of the Indian by the Government and the medical treatment of the Indian by our profession. These articles have, for the most part, been uncomplimentary and misleading, due to the fact that their authors were not in a position to know certain variables in the Indian equation. Even Hitler at the beginning of the war suddenly became the friend and champion of our Indian. This lack of knowledge displayed by the various critics is comparable to the knowledge displayed by Hitler's propaganda machine.

Seventeen years' experience with the Manitoba Indian have taught us that these criticisms are unfair. We are passing on our experience in the hope that the medical profession generally will get an intimate insight into the food and living problem of the Indian, his habits, his psychology and the consequent diseases arising from a combination of all of these.

In this way, we hope that the average medical practitioner will not only benefit in diagnosing the diseases of any Indian patient but will be in a better position to treat them.

Economic Life

The Indian's small income is derived, for the most part, in the winter from:—

TRAPPING and FISHING on a very small primitive scale, and in the summer from,

RANCHING and "SNAKE ROOT" (Senega) digging on the same small primitive scale.

Some go logging in the winter or harvesting in the fall, but like everything the Indian does, this activity is casual and short-lived. They are not steady gardeners, nor ranchers, nor as a rule do they on their own accord put sufficient hay up for their cattle. They do not seem to be able to "stay put" long enough to accomplish anything. The travelling wigwam has been displaced by a semi-covered waggon. A few of the elite have managed to buy a Model T Ford sans tires, sans hood, sans everything. This is the latest streamlined model of the Indian wigwam. This for the

most part, makes up the full capital or stock-in-trade of the Indian; and having little, it would seem that he wishes to make the most use of it for, he is perpetual motion personified in everything but work. While weeds are annihilating his garden, he is commuting between picnics or baseball tournaments.

The Indian's small intermittent income is always spent as fast as it comes and not all of it on food. Much of it is spent on tobacco, candies or childish trinkets.

There is always a food shortage from one pay-day to another and since the pay-days are far and few between, the Indian for the most part, exists in a state of semi-starvation. Game birds, fish and deer may allay this situation temporarily but are no cure.

The Government recognizes this, and attempts to supervise their sale of cattle and pulpwood. It takes an active interest in their fishing equipment, but has absolutely no control over their spending. Since the Indian is apparently incapable of controlling his own spending, he is not able—even if most successful and lucky in his fishing and trapping operations—to provide for a rainy day.

When the rainy day comes, the Government has to supply the umbrella in the form of relief. This relief takes the form of food or rations which includes flour, bacon, lard, tea, honey, rice, porridge, etc. Since the Indian is incapable of conserving these rations, great care has to be and is taken by the Government in dispensing these rations. They are, for the most part, given generally and generously only during haying and road work time to keep the able bodied Indian on his reserve to do his neglected chores.

Generous rations are given at all times to the old and feeble—a form of old age pension which existed on the reserve long before the whites adopted it.

Generous rations are given at all times to the sick and are supplemented by such foods as eggs, butter, fruits and canned milks.

Generous rations are given to some undernourished children. In addition, most of the Indian schools serve hot lunches of soup, meat and a special whole-wheat biscuit.

Besides this, the Government supervises the purchase of flour and other staples for the Indian with his treaty money. In some cases the saving to the Indian is as high as 50% since these articles cannot be bought in outlying trading posts, except at exorbitant prices.

The issuance of these rations has in many cases contributed to the inherent languid nature of the Indian — a minor injury or a trivial ailment is usually the cause for a request for rations, which request is always granted by the Government in all legitimate cases.

The Indian has no tomorrow. He lives only for today. In consequence many tomorrows will be spent in a state of semi-starvation in spite of all Government assistance.

This roughly is his present economic life.

What is his economic future? Better or worse? We would say — definitely worse. With the expansion of white civilization to the north, bringing with its caterpillars and airplanes large fishing outfits and large trapping outfits and all the other means of modern exploitation, the Indian is being pushed back further and further. His only remaining *Lebensraum* is constantly growing smaller and smaller. The whites keep creeping in and drain or lease his marshes which have from time immemorial been his "happy hunting ground." The Indian simply cannot comprehend this malignant pioneer movement, and in his childish bewilderment, he like the rest of us blames the Government, and has nothing but scorn for the surrounding white settlers.

Social Life

The Indian rarely bathes; rarely, if ever, undresses at bed time, and seldom changes his clothes. During the winter, in order to save firewood, several families congregate together in one log house. There is no scarcity of fuel since there is plenty of bush right around. There are plenty of able bodied Indians to cut this wood, so there is no scarcity of labour. The only thing lacking is the will to work.

The Indian log house is consequently heated by a minimum of fuel and a maximum of human bodily heat. The windows are hermetically insulated with pages from Eaton's catalogue and over the door on the outside hangs the remnant of last summer's tent — making the log shack practically air-proof.

As a consequence of this, a person entering an Indian home in the winter is almost knocked out by a peculiar swampy penetrating pungent odor, pathognomonic to the Indian. On recovery from this "knockout anaesthetic" he sees the old grandmothers sleeping on the floor covered with an old rabbit skin robe or old clothes; the children sleeping with their parents on bunks — as many as 6 to 8 in one bunk; the remnants of bannock from the last meal and dirty dishes on the table in the center. If it is early in the evening, the younger generation will be glancing or glaring through Eaton's catalogue or an old magazine. The squaws might be seen making moccasins out of tanned deer skins with very little bead work — the Indians having apparently lost the art of bead work for which they were once famous. Handicraft has retrogressed terribly. He will see one

small kerosene lamp or lantern, dirty or with very little oil, or he will see small wool wick embedded in lard or cod liver oil taken from their government rations. He will see perhaps on the stove a dirty lard pail with tea leaves in the bottom or a pail of snow being melted for drinking water — there being no wells in the vicinity. Neither are there any toilets, privies or latrines. The Indian simply uses the surrounding bush. The excreta is usually cleaned up by the many starving dogs.

While the Government supplies the very best sires, the Indian cattle are poorly housed, poorly fed and come through the winter no better than their owners. They are never regularly milked. Milking is only done when needed and only a cup full or so at a time.

In the summer, the medical practitioner is called either to the open log hut or often to the Indian tent. There one finds an abundance of common flies, sandflies and fleas. The squaw may perhaps be seen scraping a deer hide drying on a home-made tripod over a smoldering fire surrounded by the usual quota of dogs in a half starved condition.

Food consists mostly of bannock, fish, muskrats, small fowl — any birds from a rail to a big tern are considered edible — no fruits or vegetables with the exception of the well-liked raw onion. There is little variation between the summer and winter diet. The diet all the year round consists of bannock, lard, fish, fresh meat (the Indian eats every part of the animal) weak or strong tea (depending on the pocket book). In summer his diet is varied by the addition of wild berries. Butter, eggs, vegetables, condiments, pickles, salt, canned or preserved fruit are unknown.

Diseases and Their Indian Treatment

Tuberculosis, pulmonary and non pulmonary, such as tuberculosis adenitis, scrofula and tubercular meningitis head the list of Indian diseases. There is more meningeal and miliary tuberculosis on the Indian reserve than anywhere else.

Pneumonia is prevalent and is usually fatal.

Scabies and impetigo are very common. Sometimes one patient will have as many as four different kinds of skin diseases — a veritable paradise for the skin specialist.

Chronic discharging ears and noses are frequent.

Infantile diarrhoea is one of the commonest killers.

Whooping cough is also a killer, so is measles with the slightest complications.

Influenza is prevalent, and is the "Quisling" for tuberculosis.

G. C. is prevalent. The prevalence is due to false modesty of the Indian who will not undergo any examination. Paradoxically — a physician

meets with very few cases of one-child sterility — this in spite of many cases of salpingitis.

Lues is not rare nor is it common. The Indian can thank the white trapper, bushman or fisherman for this.

The younger Indian suffers from decayed and abscessed teeth. The older Indian as a rule has very good teeth.

Pediculi are common. We were told by an old squaw that this is a sign of good health.

Injuries are rare. The average Indian has his own leaf or weed which he applies to the wound. The roots of some of the swamp weeds are used for menstrual disorders.

Maternity Work

Maternity work is usually done by the older squaws and the mother faces labour stoically. During pains they whine a peculiar chant.

Pre-natal work is unknown. Very few will undress and suffer an examination. Any examination is done by palpating through several layers of dresses and petticoats.

The child born in the fall will never be bathed nor see the outside world until the following May or June. The Indian mother always nurses her babies. Most infants suffer from bronchial, nasal, aural and skin diseases.

Any treatment prescribed by the physician or nurse is usually neglected. The color of the Rx is more important than the drug it contains. For example, argyrol, being black is taboo. Any red pill will go over in a big way and will be in demand for all sickness — ranging from pulmonary tuberculosis to small abrasions. Lately, some progress has been made by the local nurse in infant welfare. In one clinic I saw some well-fed babies dressed very neatly. The answer to this was that the local nurse bribed them to do it by giving them a small trinket. There is no competitive spirit amongst the Indian.

Comparison of Indian and White Child

We will endeavour to formulate a comparison of the Indian and the white child. We are basing this comparison on the Mead's chart for white children and our own chart drafted from statistics taken from the examination of 82 children ranging from 1 to 15 years on 4 reserves.

The weight of the average Indian child is progressively greater than the average white child. The darker the Indian child the healthier and heavier he is.

Of the 82 children examined, 20 had enlarged tonsils (not seen through the eyes of a specialist), 31 had decayed teeth, 3 had Pott's disease of the spine, 4 had tuberculosis adenitis, 23 had calcified and non calcified tracheo-bronchial glands, and 9 had active Parenchymal T. B. as verified by the X-ray.

Not one Indian child had any evidence of an enlarged thyroid in spite of the fact that colloid goitres are common in white children in the Interlake District. Defective vision is uncommon, although there are quite a number of cases of corneal opacities. Deafness is rare, although otitis media is common in children.

In music, painting and drawing, the Indian child is better than or at least equal to the white child. Otherwise, his mentality is below the white.

Lack of Certain Diseases on Indian Reserve

An examination of the vital statistics of this Province shows that the causes of death of the white population play a very minute role in the death of Indians.

Organic gastro intestinal diseases are practically unknown. We have in seventeen years' experience yet to see an acute appendix, gall bladder, gastric or duodenal ulcer in an Indian, with the exception of one case of G.B. in an Indian woman, waist measure 56 inches. We attributed this to the fact that this patient had for 10 or 12 years worn a special corset for an umbilical hernia.

Haemorrhoids are not common, although constipation is very common.

In 17 years, we have seen only one case of cancer (of the breast) in an Indian.

We have seen only two cases of colloid goitre (a mother and her daughter — both past forty years).

We have never seen a case of organic heart disease.

We have seen only one case of high blood pressure in a mental obese Indian.

Sinovitis and chronic arthritis are common amongst the elderly — females predominating.

Acute rheumatic fever is rare, although tonsils are for the most part cryptic and diseased.

Myositis, sciatica, etc., are rare.

We have never seen skin diseases due to poison ivy or poison oak. The same can be said of eczema, hives, asthma, hay fever.

We have never seen a bald Indian. Indians are rarely grey before their fiftieth summer.

Diabetes, anaemias, renal disease and renal colic are unknown.

Epegastric pain is rare except after a successful hunt.

Typhoid is rare in spite of the improper water supply and sanitation. In the past 17 years, there has been but one outbreak.

Diphtheria, scarlet fever and poliomyelitis on the reserve are unknown.

The commonest complaint is a pain in the chest. In many cases, physical findings are negative. We attribute this to adhesions which in some cases have been proven by post-mortem findings.

Summary

What is the reason of the lack of organic gastro intestinal and cardiovascular diseases in the Indian?

1. Is it the constant state of semi-starvation?
2. Is it the more natural diet—unadulterated by a canning or preserving process?
3. Is it the absence of condiments, pickles and

free salt?

4. Is it the lack of yeast fermentation in the only bread they know—bannock?
5. Is it the tranquil or languid mental attitude of the Indian?
6. Or is it the combination of all the above?

In conclusion, we leave this to the specialists and dietitians.

Accidents of Pregnancy and Labor*

by S. KOBRINSKY, M.D., F.R.I.P.H.

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Manitoba has just cause to be proud of the drop in maternal deaths from 5.2 per 1,000 live births in 1930 to 3.3 in 1939.

The factors responsible for this improvement I believe, are the following:

- (1) Better prenatal care.
- (2) Greater importance placed by the public on the care of the mother during pregnancy parturition and the puerperium.
- (3) A more painstaking attitude on the part of those doing obstetrics.
- (4) More adequate teaching for the undergraduate.
- (5) It seems also that the mere fact that such a survey was being conducted, proved to be a definite factor in making the medical profession more "obstetric" conscious.

In spite of this we still have a list of 14 deaths under the title that I am discussing.

Here it is just as well to point out at the price of perhaps too frequent repetition, that the actual fatalities tell only a portion of the story.

There is no doubt that of the far greater number that have survived quite a proportion remain invalids to a varying degree for years and perhaps even for the rest of their lives.

Is there anything we can do that might help us to make a better showing in the future?

My task is to take up briefly the fatalities in this survey which were caused, broadly speaking, by accidents of pregnancy and labor. Time will permit me to deal only with some of them.

Of the 89 deaths as recorded in this survey, four were caused by *embolism*; three were so called *sudden death*; two from *ruptured uterus*; one from *shock* and six from *other accidents*.

Pulmonary Embolism

The problem of embolism which, in reality means pulmonary embolism, is rather important.

According to Bunzel⁽¹⁾ it is the most common cause of sudden death in connection with parturition. He reports 32 cases in a series of 31,176 confinements, that is a ratio of about one to a thousand. In this Manitoba group the incidence was four to 27,954 or only one to about 7,000. Of these four, at least three were associated with abnormal deliveries. In the fourth, while delivery proper was normal, there was considerable hemorrhage following the expulsion of the placenta; all four were multiparas.

It is generally accepted, I believe, that in obstetrical cases emboli are derived chiefly from thrombi in the pelvis and the peripheral veins. Perhaps here a short summary of the treatment of this condition may be permitted.⁽²⁾

(a) Where the pulmonary artery becomes completely blocked by thrombus, sudden death is the rule, and no treatment is of any avail.

(b) In another type, where patient is unconscious and the face blue, she should be placed in a recumbent position and oxygen should be administered. Stimulants such as coramine, brandy and strychnine may be used.

(c) In the third type, where there is no loss of consciousness, patient seemingly much distressed, dyspnoeic and showing air hunger, she should be propped up and in addition to stimulants should receive morphine.

Other Accidents of Childbirth

To take up some cases from the group marked as "Other Accidents of Childbirth." In practically all of these cases some abnormality requiring manual or instrumental manipulation was present.

In one case, patient was allowed to continue in pregnancy to the 46th week. Here, after medical induction forceps were applied unsuccessfully, position being posterior, podalic version was resorted to and delivery finally consummated with great difficulty. Patient went into shock and died 2 hours later.

Here, perhaps the recognition and correction of the posterior position *before* forceps were applied,

*Presented before the annual meeting of the Manitoba Medical Association, September, 1940, as part of a symposium on maternal mortality.

a more timely induction or possibly a Caesarian section might have saved the mother.

The second case in this group was that of a shoulder presentation. Patient went to 44 weeks, the head could not be made to engage and with great difficulty podalic version was carried out. The patient died on the 4th day; the cause was stated to be puerperal pneumonia induced by shock following difficult labor.

Here, too, an induction at an earlier period in pregnancy might have given a different result. It is also well to remember that an after coming head is not going to be any easier to deliver than when it comes first.

The 3rd case was a face presentation; attempts at delivery with forceps were unsuccessful. Finally, delivery was accomplished after a great deal of difficulty enhanced by a Bandel's ring. Patient went into shock and died 2 hours later.

Here I feel that correction of the malposition before forceps were applied might have yielded a different result.

The 4th case was that of an unmarried Indian girl of 15. The patient had been in labor for 3 days before the doctor saw her. Caesarian section was carried out because of gross contraction of pelvis. Patient died two hours after delivery. Here, of course, the fault is purely with the patient.

I may quote here from one of Bourne's books:⁽³⁾

"It is perhaps, in the prevention of mechanical difficulties in labor that antenatal care has its chief justification."

Ruptured Uterus.

Two cases are reported under this category.

In one case an Indian woman. Doctor did not see her until she was practically moribund from a ruptured uterus.

In the second case, I believe we are justified in assuming that rupture of the lower uterine segment was caused by accouchement force. The reason given was, some uterine bleeding without pain. There was a forcible dilation of the cervix with a rather rapid extraction of the foetus.

Accouchement force I believe is now considered as practically never justifiable.

Bland⁽⁴⁾ of Philadelphia once made the statement that "all forms of both manual and implemental measures applied to or through the cervix inevitably result in damage."

Once rupture of the uterus has occurred the only hope in great majority of such cases is radical surgery. I personally had occasion a few years ago to deal with a case⁽⁵⁾ that was admitted to the St. Boniface Hospital with head of the foetus actually protruding through the uterus into the abdominal cavity.

A Porro Caesarian was carried out. This patient made an uneventful recovery.

One of the points to bear in mind is that spontaneous rupture could occur through a previous Caesarian scar.

Sheldon⁽⁶⁾ of Albany has recently reported an incidence of five such cases in a series of nine spontaneous ruptures of the uterus.

Obstetrical Shock

While only one case is placed under this specific heading there is no doubt that shock was at least a contributing fact in several of the other cases.

Lochran⁽⁷⁾ of Derby, England, states that the weight of opinion at present appears to be that the essential cause of the clinical features and histological findings is the presence of histamine or allied vaso-depressor toxic substances in the circulation together with or immediately preceded by exhaustion of certain medullary nerve centres and some think the reduction of the CO₂ content of the blood.

The suprarenal gland must also come into the picture. A case of mine a few years ago at the Grace Hospital went into shock with a fatal termination after a comparatively simple forceps delivery. The post mortem revealed no abnormalities except severe haemorrhage into both suprarenal glands.

In one case in this series death was considered purely psychological because patient seemed to have no apparent signs of haemorrhage or embolism. I wonder if here, too, a post mortem might not have revealed a suprarenal haemorrhage.

According to Mathews⁽⁸⁾ of Brooklyn the best way to judge the presence of shock in its early stages and its subsequent progress is by frequent red blood cell counts.

Here we will get a definite rise in the cell count that is from almost 5 to 9,000,000. This will come about much sooner than the drop in blood pressure which we used to depend upon so much in the past for our criterion in this condition.

The treatment, of course, resolves itself first into avoidance of unnecessary trauma and haemorrhage.

Concentrated solution of dextrose that is 50% 100-200 c.c. given intravenously is a very effective aid. The extract of adrenal cortex is of value.

Blood transfusions are to be resorted to only if shock is a sequel of or accompanied by severe haemorrhage. Oxygen should be administered. Gum acacia has its advocates as for example, Randall & Hunt⁽⁹⁾ of the Mayo Clinic. Meakins⁽¹⁰⁾ in the current issue of the Canadian Medical Association Journal stresses the importance of giving treatment early. Best and Solandt⁽¹¹⁾ in the same issue suggest the value of concentrated human serum.

Conclusions.

(1) The mere carrying out of this survey — with a wide enquiry into the course and issue of all pregnancies, has produced an obvious improve-

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ment in the statistics of maternal mortality, and no doubt in maternal morbidity.

(2) Those of us in the medical profession who do obstetrics must strive still further to improve our diagnostic abilities and our obstetric consciousness. This will help us to detect and treat abnormalities before it is too late.

May I add that we all owe a distinct debt of gratitude to the Rockefeller Foundation and to our very sympathetic and distinctly progressive Department of Health and Public Welfare for making this survey possible.

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CAUSES OF MATERNAL DEATHS

MANITOBA

Survey Period

May 1, 1938-April 30, 1940

	Number	Percent	x Rate	1928-32	1933-37
Abortion	19	21.3	0.7	0.8	0.9
With sepsis	13				
Without sepsis	6				
Self-induced	8				
Ectopic Gestation	4	4.5	0.1	0.2	0.1
Puerperal					
Haemorrhage	18	20.3	0.7	0.5	0.7
Placenta Praevia	3				
Accidental	15				
Puerperal Sepsis	13	14.6	0.5	1.3	0.9
Toxaemia	21	23.7	0.8	1.5	0.9
Albuminurea	18				
Other	3				
Embolism and sudden death	7	7.8	0.3	0.5	0.4
Other accidents of childbirth	6	6.7	0.2	0.4	0.3
Shock and other conditions	1	1.1	0.04	0.03	0.2
TOTAL	89	100.	3.3	5.2	4.6
x Rate per 1,000 Live Births.					

Editorials and Association Notes

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The Poliomyelitis and Encephalitis Epidemics

During the past seventy-five years epidemics of the acute exanthemata have become less frequent and lost much of their virulence. During the same period epidemics of virus infections of the central nervous system have made their appearance and have steadily spread. Manitoba has suffered more from these new epidemics than any other part of the world.

During the period from 1919 to 1925, encephalitis lethargica attacked many hundreds, caused many deaths, and left an equal number totally incapacitated with Parkinsonism. In 1928 there were about 500 cases of poliomyelitis with 7% deaths, and an unknown number of paralytic sequels (possibly 20%). An epidemic of similar proportion and results occurred in 1936. In the intervals between epidemics and also since 1936, sporadic cases of various types of encephalomyelitis have not been infrequent. These have usually been diagnosed as lymphocytic choriomeningitis, or, in recent years some have been attributed to the equine virus.

In June of this year an epidemic of poliomyelitis made its appearance and is still not abating. Though this epidemic is larger than those of 1928 and 1936, fortunately, the mortality and paralysis appear to be definitely lower than in other years. (This may be partly due to more general recognition of abortive cases). One curious feature of the epidemic is the great frequency of palatal paralysis (usually the right side).

In the midst of this epidemic (July), cases of encephalitis appeared and have already caused more deaths than poliomyelitis. Over 200 cases have already been diagnosed and the mortality appears to be about 20%.

As a rule the clinical differentiation between these two diseases is not difficult. They are contrasted in many respects:

1. *Age Incidence:* Encephalitis begins in the age groups where poliomyelitis leaves off. Roughly 50% are over fifty and few are under twenty.

2. *Sex Incidence:* About 80% of the cases have been males.

3. The onset is much more violent and the febrile course more prolonged in encephalitis. On an average, acute indisposition lasts for two days in poliomyelitis and for seven days in encephalitis.

4. Encephalitis is characterized by prolonged severe frontal headache and cerebral symptoms (apathy, lethargy, delirium, disorientation and coma; paralysis of muscle groups does not occur). In contrast, the headache in poliomyelitis is mild and of short duration. Cerebral symptoms are rare (except in infancy), but muscle weakness is common, even in those who do not develop actual paralysis.

5. The cerebro-spinal fluid count is almost invariably increased in both diseases. There are minor differences in the differential count.

The identity of the virus responsible for the encephalitis has not been established. Clinical findings are quite distinct from encephalitis lethargica but are similar to cases described in the St. Louis epidemic (1933) and those at present appearing in Minnesota and the Dakotas. It is possible, also, that the western equine virus is contributing some cases. There may even be mixed cases.

There is no specific treatment for encephalitis. Since pneumonia is a common complication, it is suggested that prophylactic doses of sulfapyridine be given (seven and a half grains, four times a day). Complete rest from the onset of symptoms is imperative and appears to influence the course of the disease. Lumbar puncture often relieves the symptoms; chloral and bromides per rectum are useful in delirium.

River's Opinion of Serum Treatment of Poliomyelitis

Thomas M. Rivers, Director of the Hospital of the Rockefeller Institute for Medical Research, and noted authority on Poliomyelitis, in a lecture given in April, 1941, published with other lectures on Infantile Paralysis by the National Foundation for Infantile Paralysis, Inc., 120 Broadway, New York City, says:—

"Naturally occurring poliomyelitis in human beings and the experimental disease in monkeys do not always protect against second attacks of the malady. It is difficult to protect monkeys by vaccination without inducing the disease, and, as yet, no safe, efficient vaccine has been devised for human use. The role played by neutralizing antibodies in resistance to and recovery from infection is not known. Poliomyelitis can occur in human patients possessing ample amounts of neutralizing antibodies for the virus. Monkeys as a rule and human beings not infrequently recover from the disease before the appearance of circulating neutralizing antibodies. Administration of large amounts of neutralizing antibodies to normal monkeys protects only a few of them against infection. There is no definite evidence that serotherapy administered to human beings, even in the preparalytic stage, is efficacious."

Indians

The Indian population of Manitoba is frequently referred to in tuberculosis articles but rarely mentioned otherwise in medical journals. In this issue of the *Review* Dr. Walkin presents an amusing and informative article on the character, mode of life, and diseases of the Interlake Indians.

On a recent trip to Norway House the writer was able to confirm many of Dr. Walkin's observations. The 800 Swampy Crees on this reservation are all said to have some white blood, but whatever the proportion of the mixture the dislike of present work for future benefits is well-nigh universal. Indians can be hired to build a dock or a wood pile, but never attempt to do so on their own property. Indians on relief, with the forest at their back doors, requested that fuel be provided, on the ground that this was done in Winnipeg.

The most amusing trait noted was the giving of bizarre Christian names. The surname is usually Scotch. Common Christian names vie with Biblical Christian names in popularity, e.g., Job, Zebuchadnezzar. Some names were taken from packing cases, like Sherwin-Williams, Harris Abattoir and Canada Packers. The latter did not use his middle name much, and was usually just called "Canada."

Counter Propaganda Reaches *The Lancet*

Philip Manson-Bahr finishes a gloomy and detailed account of "The Prevalent Diseases of Italian East Africa" in *The Lancet*, May 10, 1941, p. 609, with the following blast against Sir Aldo Castellani, formerly of Harley Street and now Mussolini's number one worm catcher:—

"Public opinion regarding the nosology of Abyssinia may have been greatly influenced by the official medical reports on the Italian conquest of that unfortunate country; these presented a rosy picture, whereas, on the evidence of the Italian observers quoted in this paper, none of the territories under consideration can honestly be described as health resorts. Some reference is obviously necessary to the account which Castellani has given to the world in his papers and lectures on the hygienic measures and hospital organisation of the Italian expeditionary forces during the Ethiopian War of 1935-36. Even a cursory examination demonstrates that the figures are to a large extent fallacious. It is necessary to emphasise this point since this report has been widely cited as the outstanding example of modern military hygienic achievement (see Scott 1939). It is only necessary to refer to a few of the obvious anomalies. The number of white troops engaged was over 500,000, and during the 7 months of war deaths from disease (including those from accidents such as drowning) numbered 599, which gives a figure for the annual death rate of 2 per 1,000; this puts the death rate of the Italian Army at less than 2.9, the lowest annual figure ever recorded for the age groups 20-30 in the Registrar-General's Report for England and Wales under peace conditions and lower than the lowest to be recorded for the Italian Army in Italy. Nor need we regard seriously the remarks on the low incidence of malaria among the Italian troops during this campaign; this was ascribed to quinine prophylaxis in one of the most malarious countries in the world, in direct contradiction to the testimony of the Italian medical officers quoted in this paper. In a country teeming with tapeworms only two were noted in the Italian Forces. It can therefore be surmised that in this case political propaganda has overridden statistical accuracy."

New Uses for Sulfathiazole

In a discussion on Chemotherapy in Vancouver in June, reported in the August number of the *Bulletin* of the Vancouver Medical Association, p. 327, Dr. Osgood spoke as follows:—

"The drug of choice for local use is sulfathiazole, because this drug has proved the most effective compound. We feel that when we have a considerable local collection of pus the local use of the drug is important because large numbers of organisms are not sterilized by any of these drugs, so where there is a local collection of pus not due to the tubercle bacillus but due to almost

any other organism, we like to get a blood level of sulfathiazole between 5 and 8 mg. That blood concentration will take care of the small number of organisms that might be in the blood stream or in the adjacent tissue. As soon as that level is obtained by use of sodium sulfathiazole intravenously, the local collection of pus should be drained and the pus or necrotic tissue all washed away with saline solution saturated with sulfathiazole. That takes about 1 gr. per litre to make this solution. Then powdered sulfathiazole is applied locally in excess. Except in the general peritoneal cavity, or where there is a very large absorbing surface, the amount of sulfathiazole does not make much difference, for the reason that it is soluble only about to the amount of 1 gr. per litre.

"The method of applying the local sulfathiazole depends upon the type of the infection rather than the location of the infection; e.g., a compound comminuted fracture — rinse it with the saline saturated with the sulfathiazole, pack it with sulfathiazole and it can be sewn up like a clean wound. In a great majority of instances it will heal by first intention. In general peritonitis, as soon as the blood level is obtained — immediate operation, closure of the opening, rinsing out the peritoneal cavity with saline saturated with sulfathiazole poured in or sprinkled in with a salt cellar. After tooth extraction we have had a considerable series of osteomyelitis of the jaw. We now simply pack the powdered sulfathiazole into the infected socket afterward. Or with something like a brain abscess, the abscess is opened and with a catheter we rinse out the cavity with saline saturated with sulfathiazole, put in a very heavy suspension, anywhere from 2 to 10 grs. to 20 c.c. of the saline. You have to shake it in order to maintain it in suspension. In sinuses, rinse the sinus free from pus and put in the saline suspension. In all streptococcal throats we have been using powdered sulfathiazole with a powder blower, blown into the throat. It is completely non-irritating. In G.C. ophthalmitis you can give a saturated solution by a continuous drip. For those very rare cases of gonorrhoea which do not clear up with sulfathiazole by mouth, we use sulfathiazole intra-urethrally. We have had quite a number of cases in the male that have failed to respond to the drug by mouth — out of a very large series — and they have cleared up with intra-urethral administrations. In the female we use this in a contraceptive diaphragm over the cervix."

Dr. Perrin Long said that in children with long standing pychonephritis and poor urinary function tiny doses of sulfathiazole 5 times daily would control the urinary infection without giving too high a blood concentration. He approved of sulfanilamide for long periods of time in patients with acute nephritis. In measles prophylactic sulfanilamide 10 grains thrice daily for adults cuts down middle ear infection, sinusitis, bronchitis and pneumonia.

Dr. Struthers recommended sulfathiazole in scarlet fever to diminish cervical adenitis and mastoid infections.

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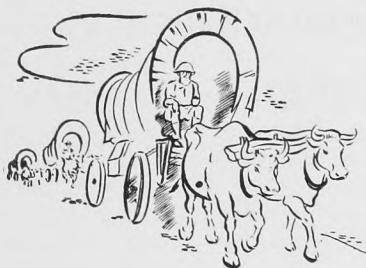
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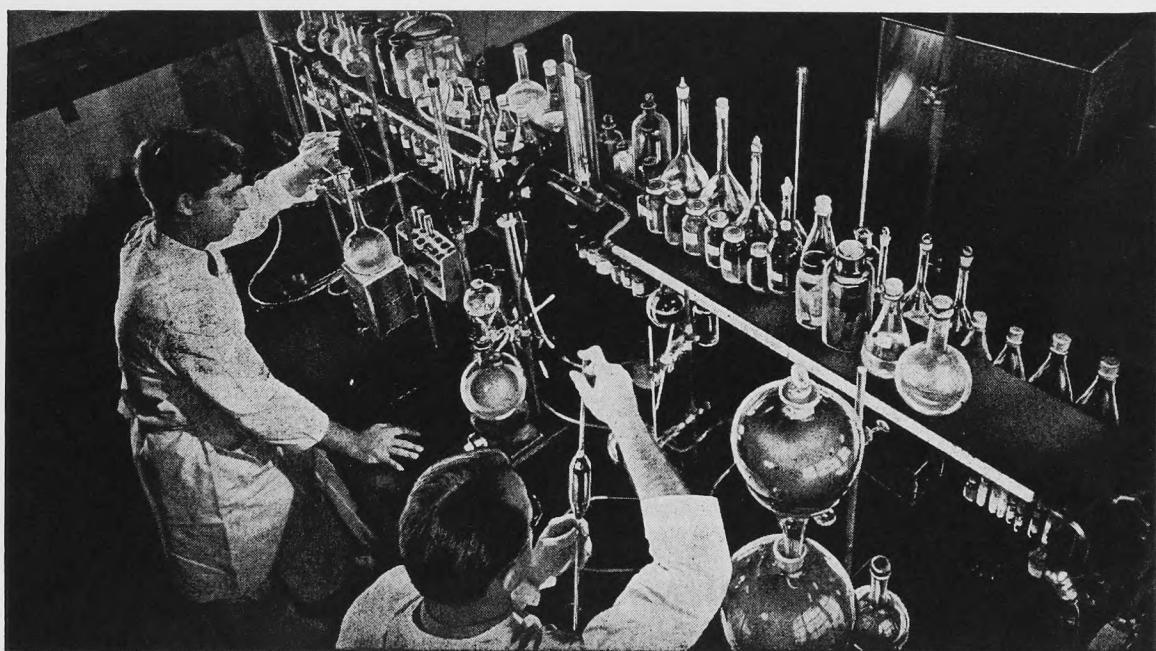
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Total solids	5.87 gm.
Ethyl alcohol (7.9% by volume)	6.25 gm.
Total carbohydrates	3.86 gm.
Reducing sugars as glucose	0.66 gm.
Protein	None
Total nitrogen	0.10 gm.
Ash	0.28 gm.
Phosphorus	38.50 mg.
Calcium	7.00 mg.
Iron	0.072 mg.
Copper	0.049 mg.
Fuel value	61 cal.
Vitamin B ₁	6 Int. Units
Vitamin G	33 Sherman Bourquin Units



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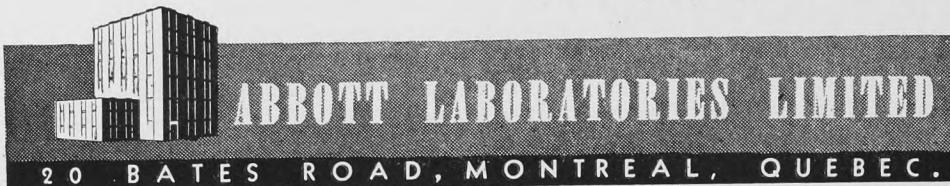
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Personal Notes and Social News

Conducted by Gerda Fremming, M.D.

Dr. Doreen Corke of New York City spent a short visit with her parents, Mr. and Mrs. G. B. Corke, at Little Britain, Man.

♥ ♥ ♥

Dr. and Mrs. Brian Bird of Brandon, Man., have recently returned from a holiday trip through the province of Quebec.

♥ ♥ ♥

Dr. and Mrs. B. Kanee of Weyburn, Sask., are receiving congratulations on the birth of a son, Benson Harold.

♥ ♥ ♥

Dr. and Mrs. Stanley Herbert and family have returned from the Lake of the Woods, where they spent the last five weeks.

♥ ♥ ♥

Dr. and Mrs. Oliver S. Waugh were recent guests at Minaki Lodge, Minaki, Ont.

♥ ♥ ♥

The engagement of Dr. James A. Porter to Miss Marie Rose Gratton has been announced. The wedding will take place in September at St. Edward's church, Winnipeg.

♥ ♥ ♥

Dr. and Mrs. William Malyska of Waskada, Man., are receiving congratulations on the birth of a daughter on August 12th, 1941.

♥ ♥ ♥

Dr. R. G. Green recently returned from a holiday trip in Eastern Canada.

♥ ♥ ♥

Drs. Lennox Bell, Gordon S. Fahrni and F. G. McGuinness of Winnipeg will attend the Annual Meeting of the British Columbia Medical Association.

♥ ♥ ♥

Dr. and Mrs. Digby Wheeler left by motor for Banff. From there they will proceed by train to Vancouver, then by boat to Alaska. On their return they will visit Lake Louise and Jasper, arriving in Winnipeg early in September.

♥ ♥ ♥

Dr. and Mrs. E. S. Moorhead were guests at the Chalet, Wasagaming, Man., where they spent a short holiday.

♥ ♥ ♥

Dr. George S. Baldry of Winnipeg has left for Toronto, where he will take a course in post graduate work at the University of Toronto.

♥ ♥ ♥

Dr. and Mrs. M. R. MacCharles and family are vacationing by motor through the Rocky Mountain District. Banff, Lake Louise, Kootenay Lakes and other points of interest are included in their itinerary.

Dr. and Mrs. T. W. Shaw, Marney and Eleanor, of Russell, Man., are holidaying in Ontario.

♥ ♥ ♥

Dr. and Mrs. H. H. Hutchinson of Neepawa, Man., have returned from a holiday trip to Vancouver and Victoria, B.C.

♥ ♥ ♥

Dr. and Mrs. Gerard Allison recently returned from a visit at Norway House, Man.

♥ ♥ ♥

Dr. and Mrs. Cyril Stevens chose Hawk Lake for a two weeks' vacation.

♥ ♥ ♥

Drs. Kay and Walter Leslie and son, David, have left for the Lake of the Woods to spend their vacation. While there they will be guests at the summer home of Dr. and Mrs. A. E. Deacon.

♥ ♥ ♥

Dr. Alexander Gibson was married Friday, August 22nd, to Helen Forbes Bryce, youngest daughter of Mr. and Mrs. Robert H. Bryce of Winnipeg. After the ceremony, Dr. and Mrs. Gibson left by motor for the Lake of the Woods and on their return will reside at 261 Harvard avenue.

♥ ♥ ♥

Surgeon-Lieutenant John Bingham, who spent the last year at sea, recently spent his leave visiting his parents, Mr. and Mrs. Richard Bingham of Winnipeg.

♥ ♥ ♥

Surgeon-Lieutenant R. L. Cook, recently attached to the Winnipeg division of the R.C.N.V.R., has been appointed to a post in the Naval service at the Pacific coast.

♥ ♥ ♥

Surgeon-Lieutenant Quentin Douglas Jacks, R.C.N.V.R., is to be married early in September at Victoria, B.C., to Marion Irene, daughter of Mr. and Mrs. C. A. Melvin.

♥ ♥ ♥

Dr. David Bradshaw Stewart, only son of the late Dr. and Mrs. D. A. Stewart of Ninette, Man., was recently married to Ruth Mae, eldest daughter of Mr. and Mrs. Stanley Rigby, of Killarney, Man.

♥ ♥ ♥

Dr. and Mrs. Fred. Jackson spent a short holiday at Clearwater Bay, Ont.

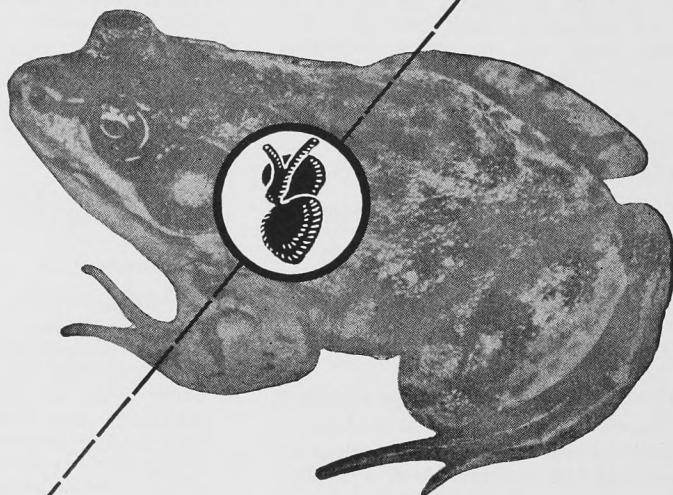
♥ ♥ ♥

The *Review* is always glad to receive items of a personal or social nature for this page; however, as the *Review* goes to press a week in advance of publication date, contributions must be in by the 20th of the month preceding date of issue.

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Department of Health and Public Welfare

We are publishing herewith the second of the essays prepared by the medical students before taking the final examination in Preventive Medicine at the Faculty of Medicine of the University of Manitoba last year. The one for this month is written by Doctor G. S. Baldry, on the subject "The Value of Present Day Immunological Practice in Disease Prevention," and reads as follows:

"The Value of Present Day Immunological Practice in Disease Prevention"

FOREWORD

"In the evaluation of present day immunological practice in disease prevention many years must elapse before the true worth will be determined. Some results will show beyond doubt the value of prevention in diseases like smallpox and diphtheria, but others, like tuberculosis by the use of B.C.G. and the common cold, will take time.

"This paper will attempt to present the results of current practice in the various diseases involved. The value in figures and cases will be given whenever possible.

Smallpox

A. Method:

A drop of vaccine impregnated into the epidermis.
Children should be done first at 2 to 6 months:
again at 5 to 7 years;
again at 15 years of age.

Exposed persons should be vaccinated every 10 years and adults have one successful vaccination after puberty.

B. Results:

"Among unvaccinated less than 7% escape smallpox in a severe epidemic. (1)

"The fatality among unvaccinated is more than 50 times the fatality among the vaccinated at any time in their lives.

"Vaccination 4 days after exposure to a case of smallpox may prevent the disease.

"Doctor Groulx, Director of Dept. Health, Montreal, in his paper 'Elimination of Smallpox in Montreal by Vaccination' (2) reports the historical and effective vaccination in Montreal. First vaccinations were done in 1801 but it was 1876 before they were done on a large scale. In 1887, after a great epidemic, the Province of Quebec made it obligatory that all children over 3 months of age be vaccinated. The City of Montreal made this more effective in 1904 by requiring certificates of successful 'take' before admission to school or a place of employment.

Conclusion

"Prophylactic vaccination affords the most perfect immunity we have in medicine to a communicable and fatal disease. Its value is emphasized by the fact that there is no remedy once smallpox develops.

Scarlet Fever

"A. Thalhimer (3) reports the use of convalescent scarlet fever serum has been found efficient as a prophylactic. He found that about 85% of the children who were in intimate contact with patients with scarlet fever and who from experience, would be expected to develop the disease, failed to do so after receiving convalescent scarlet fever serum.

"B. Doctor George R. Walton of Regina (4) inoculated through his Department of Health, October 1st, 1938, to December 31st, 1939, 3,492 persons. During 1936, 1937 and 1938, a total of 1,323 cases of scarlet fever were reported, while in 1939 there were only 55 cases. Thirty-one were children of school age.

Of this number only 3 had received preventive treatment.

"C. Results from Hamilton, Ont. (5):—

"Beginning 1936, 2,421 children in 15 schools were immunized. Following a recent severe epidemic, a survey of the value was made. Of 1,661 cases reported from September, 1939, to July 31st, 1940,
29.4% were in pre-school group
55.1% were in school group and
15.4% were over 16 years of age.

"Only 6 of the 2,421 children immunized or 0.36% were reported as having the disease in the epidemic. In each of 2 families, 3 immunized children escaped while one not immunized developed scarletina.

	No. of Pupils	Cases	Rate
15 schools in program	5,353	144	2.6%
36 schools no immunization	18,565	772	4.5%

Diphtheria

"Fraser (6) in his review of Diphtheria Toxoid states MacKinnon and Ross have shown that the incidence of diphtheria among children given three doses of toxoid (0.5, 0.5, 1cc. at intervals of 3 weeks) and living in an environment in which diphtheria was very prevalent, was only 10% of the incidence of this disease among other children living in the environment at the same time but not given toxoid. The reduction of 90% in incidence is a fair measure of the degree of protection afforded by diphtheria toxoid given as indicated above.

"In this same investigation it was shown that in the 2 dose group, the reduction was 76%. These studies had to be laid aside for the very gratifying reason that diphtheria cases became too infrequent and thus rendered invalid any conclusion as to the incidence in the inoculated as compared with the uninoculated groups of children. In cities where immunization has been intensive and directed toward the pre-school child, clinical cases of diphtheria have been rare or totally disappeared, as in Toronto, Hamilton, St. Catharines, and Brantford, Ontario.

Whooping Cough

"Doctor Harry Medovy of Winnipeg (7) reports on the prevention of Whooping Cough. A summary of his views are:

"1. Immunity conferred by serum is not and cannot be expected to be absolute.

"2. Contrary to earlier belief, the immunity derived from a previous attack of the disease itself is also far from absolute.

"3. In both cases it tends to break down when exposure is intimate or prolonged.

"4. Under less drastic conditions of exposure both the artificially and the naturally produced immunity appear to afford protection in a large proportion of cases. The protection from both sources appears to be approximately equal.

"5. There is evidence of partial protection when the immunized individual does acquire the disease as shown by briefer and milder symptoms.

Typhoid

"Malbin (8) reports on an epidemic of typhoid fever in a hospital population, 90% of which had been immunized against typhoid fever. The epidemic broke out in the military hospital at Vich, Spain, in the last week of April, 1938. The hospital at this time had 1,700 patients and a staff personnel of 200. The source of infection was one of three water supplies of the hospital which had become contaminated from the overflow of an adjacent sewerage system. The population of the hospital became constant for a period of five weeks with the outbreak of the epidemic. Questioning revealed that about 10% of the 1,900 members had never been vaccinated against typhoid fever while the remaining 90% had received two or more injections of typhoid vaccine from one year to three months prior to the epidemic.

"In all, there were 147 cases of typhoid fever proved by Widal tests and positive cultures from the blood, urine or stools and in several cases from all three sources. Forty-nine of these patients had never been vaccinated against the disease, or approximately 25% of the 190 unprotected persons. The remaining 98 patients had been previously immunized, giving an incidence of 6% for the immunized members of the hospital. The total incidence of the hospital was about 7.5%. The case fatality rate for the non-immunized group was 10.2% and for the immunized group, 4%. Only 14.3% of the immunized patients gave a typical typhoid clinical picture. Bradycardia, splenomegaly and leukopenia, in order of frequency, were the constant features noted clinically.

Measles

"William Thalhimer of New York City Dept. of Health reports that using convalescent measles serum administered intramuscularly in the proper amount not later than the 6th-7th day after exposure will be followed by prevention or modification of the disease to an attenuated form in about 98% of instances. Four times the volume of pooled normal adult serum will have the same prophylactic efficacy. The modified attenuated disease confers an active permanent immunity.

"Since the mortality up to the age of 1 year is 8%, 1-3 years 5%, and the entire group under 5 is 1½%, this is a definite step in reduction of mortality in early age group.

Tetanus

"The value of a anti-tetanic serum has been proven for years. It is significant that every combatant in the allied forces was inoculated in the last war as well as every combatant in the current World War.

The Common Cold

"The value of vaccines in the common cold has not been conclusively reduced to mathematical results. There are many case reports and many types of vaccines used, the commonest being prepared stock vaccines and autogenous vaccines in the case of patients with chronic sinusitis and frequent colds. From a few cases I have seen among nurses and internes, in about one-third, the number of colds is definitely decreased. In about another third there isn't much difference noticed, and in the remaining third there definitely is no improvement. Better results are obtained with autogenous vaccines than with the stock preparations.

Tuberculosis

"There are many reports on the use of B.C.G. but many men who are leaders in Tuberculosis work in Canada express doubt as to the validity of the results because of the extreme difficulty in controlling the work. As the best results are to be expected among children of the tuberculous, it will be several years before accurate figures may be obtained. It is true

that some of the children are in their teens but many of them had their cases poorly controlled. It is of definite value however.

"Other diseases using immunological procedures to good advantage include poliomyelitis; rabies must be mentioned.

"An excellent immunization program that may be followed for children is:

- 3- 6 mos.—Smallpox vaccine.
 - 6- 8 mos.—Whooping cough vaccine.
 - 9-12 mos.—Diphtheria toxoid.
 - 18 mos.—1 dose Whooping Cough Vaccine (reinforcing).
 - 1- 2 yrs.—Scarlet fever toxin.
 - 2- 4 yrs.—1 dose of Diphtheria toxoid.
 - 5-10 yrs.—Smallpox vaccine (reinforcing).
- Typhoid inoculations may be added as required."

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COMMUNICABLE DISEASE REPORT

June 18th - July 15th, 1941

Chickenpox: Total 217—Winnipeg 94, Dauphin Town 40, St. James 18, Rockwood 12, Transcona 10, Unorganized 8, Manitou 7, Tuxedo 3, Pembina 3, Selkirk Town 3, Edward 3, Carberry Town 2, Brandon 1, Brenda 1, Fort Garry 1, Hillsburg 1, Kildonan West 1, McCreary 1, Sifton 1, St. Boniface 1, Albert 1 (Late Reported: Lakeview 3, St. James 2).

Measles: Total 149—Winnipeg 53, Flin Flon 13, Hamiota Rural 13, Rivers Town 12, Brenda 6, St. Boniface 6, Unorganized 5, Rockwood 5, Portage City 4, Blanshard 3, Daly 3, Kildonan East 2, Rhinelander 2, Springfield 2, Tuxedo 2, Winnipeg Beach 2, Albert 1, Dauphin Town 1, Dauphin Rural 1, La Broquerie 1, Macdonald 1, Pembina 1, Pipestone 1, Portage Rural 1, Rosser 1, Shell River 1, Ste. Anne 1, St. James 1, Transcona 1 (Late Reported: Rhinelander 2, Rivers Town 1).

Tuberculosis: Total 74—Unorganized 13, Winnipeg 12, Brandon 5, Dauphin Town 3, Dufferin 3, Ellice 3, Brokenhead 2, Glenwood 2, Rockwood 2, Selkirk Town 2, Victoria 2, Bifrost 1, Cartier 1, Dauphin Rural 1, Franklin 1, Glenella 1, Hamiota Rural 1, Hanover 1, Lansdowne 1, Lorne 1, Miniota 1, Minnedosa 1, Neepawa 1, Norfolk South 1, Portage Rural 1, Portage City 1, Rhinelander 1, Rosedale 1, Stanley 1, St. Andrews 1, Ste. Anne 1, St. Boniface 1, St. Clements 1, St. Francois Xavier 1, St. James 1, St. Vital 1.

Mumps: Total 66—Winnipeg 26, Tuxedo 20, Flin Flon 9, Brandon 2, Macdonald 2, Fort Garry 1, St. James 1 (Late Reported: St. James 3, Flin Flon 1, Lakeview 1).

Scarlet Fever: Total 33—Winnipeg 15, Portage City 5, Tuxedo 3, Kildonan West 2, Ochre River 2, Unorganized 2, Flin Flon 1, Norfolk North 1, St. Boniface 1 (Late Reported: Kildonan West 1).

Anterior Poliomyelitis: Total 28—Winnipeg 21, Fort Garry 2, Kildonan East 2, Springfield 1, St. Clements 1 (Late Reported: Lakeview 1).

German Measles: Total 16—Brandon 12, Flin Flon 3, Ste. Anne 1.

Diphtheria: Total 15—Winnipeg 4, Unorganized 4, St. Clements 3, St. James 2, Whitemouth 1, McCreary 1.

Whooping Cough: Total 7—Winnipeg 3, Brandon 2
(Late Reported: Cartier 1, Hanover 1).

Septic Sore Throat: Total 5—Cartier 1, Gladstone 1, Springfield 1, St. James 1 (Late Reported: Gimli Rural 1).

Influenza: Total 5—Carberry Town 1 (Late Reported: Carberry 2, West Kildonan 1, Unorganized 1).

Typhoid Fever: Total 4—Hanover 1 (Late Reported: Ste. Anne 2, Grandview Rural 1).

Erysipelas: Total 4—Winnipeg 2, Assiniboia 1, St. Clements 1.

Pneumonia Lobar: Total 3—Unorganized 1, Brandon 1 (Late Reported: Old Kildonan 1).

Meningococcal Meningitis: Total 2—Winnipeg 2.

Undulant Fever: Total 2—Winnipeg 2.

Puerperal Fever: Total 1—(Late Reported: Unorganized 1).

Trachoma: Total 1—(Late Reported: Hanover 1).

Diphtheria Carriers: Total 1—Winnipeg 1.

Treaty Indians: Total 15—Tuberculosis 14, Pneumonia Lobar 1.

Venereal Disease: Total 137—Gonorrhoea 101, Syphilis 36.

DEATHS FROM COMMUNICABLE DISEASE

June - 1941

URBAN—Cancer 50, Tuberculosis 8, Pneumonia Lobar 2, Pneumonia (other forms) 6, Syphilis 3, Diphtheria 1, German Measles 1, other deaths under one year 21, other deaths over one year 189, Stillbirths 20. Total 301.

RURAL—Cancer 33, Tuberculosis 18, Pneumonia Lobar 2, Pneumonia (other forms) 7, Dysentery 2, Influenza 2, Measles 1, Syphilis 1, other deaths under one year 21, other deaths over one year 152, Stillbirths 23. Total 262.

INDIAN—Tuberculosis 8, Pneumonia Lobar 1, Pneumonia (other forms) 4, Dysentery 3, Septic Sore Throat 1, other deaths under one year 6, other deaths over one year 7. Total 30.

Disease	Manitoba June 18 - July 15	Ontario June 15 - July 12	Saskatchewan June 15 - July 12	Minnesota June 15 - July 12	North Dakota June 15 - July 12
Anterior Poliomyelitis	27	5	2	11	1
Meningococcal Meningitis	2	34	4		
Chickenpox	212	829	166	205	
Diphtheria	15	17	2	4	4
Erysipelas	4	6	6	2	
Influenza	1	70	2		15
Measles	146	2,300	104	48	53
German Measles	16	593	38		
Mumps	61	423	78		
Pneumonia (Lobar)	2				22
Scarlet Fever	32	509	23	87	6
Septic Sore Throat	4	21			
Smallpox			1	2	
Tuberculosis	74	183	68	152	22
Typhoid, Para-Typhoid	1	17			1
Undulant Fever	2	8	1		
Whooping Cough	5	534	2	288	84

It is noted that Saskatchewan and Minnesota still report a case or two of Smallpox.

The Epidemic of Poliomyelitis is rising rapidly in Manitoba and at the time of going to press has probably reached its peak.

Encephalitis is prevalent in Minnesota, North Dakota and Manitoba, and should be watched for. Some cases are much like poliomyelitis but careful examination and history will give a definite diagnosis in the majority.

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